



112(r) - Risk Management Program

Ammonia Safety and Training Institute
Conference

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Agenda



- Applicability and Purpose
- Risk Management Begins with You
- EPA inspections

Applicability and Purpose

- Facilities with > a TQ of an acutely toxic or flammable chemical in a process.
 - 10,000 lbs anhydrous ammonia
- Preventing and planning for atmospheric releases.



Bhopal, India - 1984



The abandoned factory (center) and the residential area surrounding it.

www.studentsforbhopal.org



The tank that emitted lethal MIC gas the night of the disaster. The force of the reaction blew the tank out of its concrete sarcophagus, and it now lies several yards from the other MIC tanks.



This Sevin corroded through its tank and now festers in the open air.



Photo - Courtesy : Pablo Bartholomew
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Applicability cont.

Exemptions:

- Farmers using ammonia fertilizer
- Flammable substances used as fuel or held for sale as a fuel at a retail facility
- Chemicals in transportation, including storage incident to transportation
- Naturally occurring hydrocarbon mixtures prior to entering a processing plant
- Laboratory chemicals

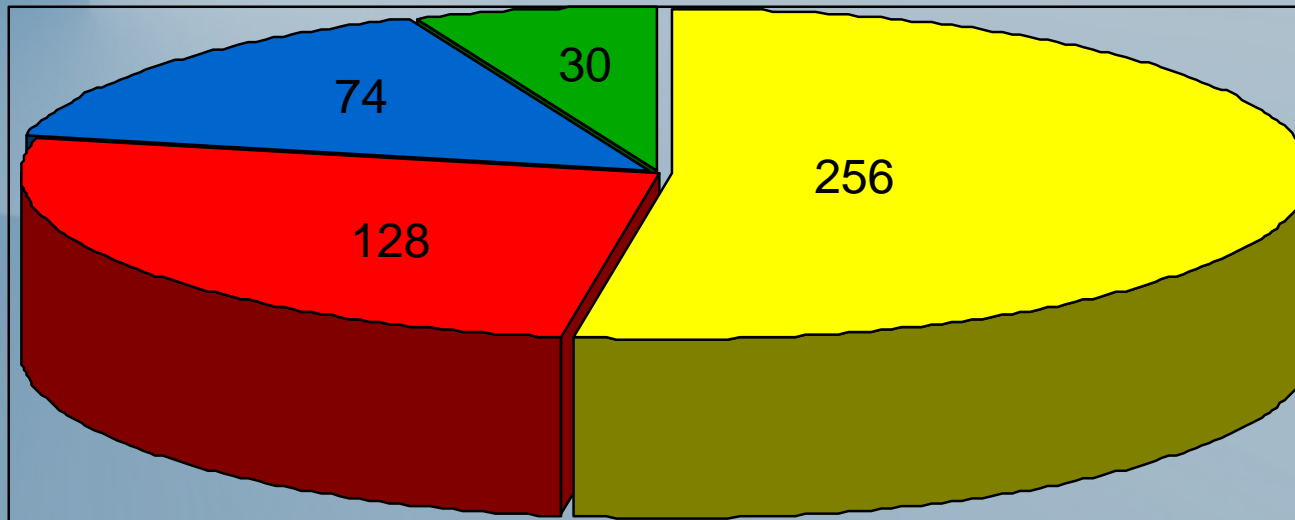
Applicability cont.

§ 112(r)(1) of CAA – General Duty Clause

- Facilities that handle hazardous substances bear the primary responsibility for ensuring their safe use.
- Applies to any facility that handles any hazardous substance, regardless of the quantity on site

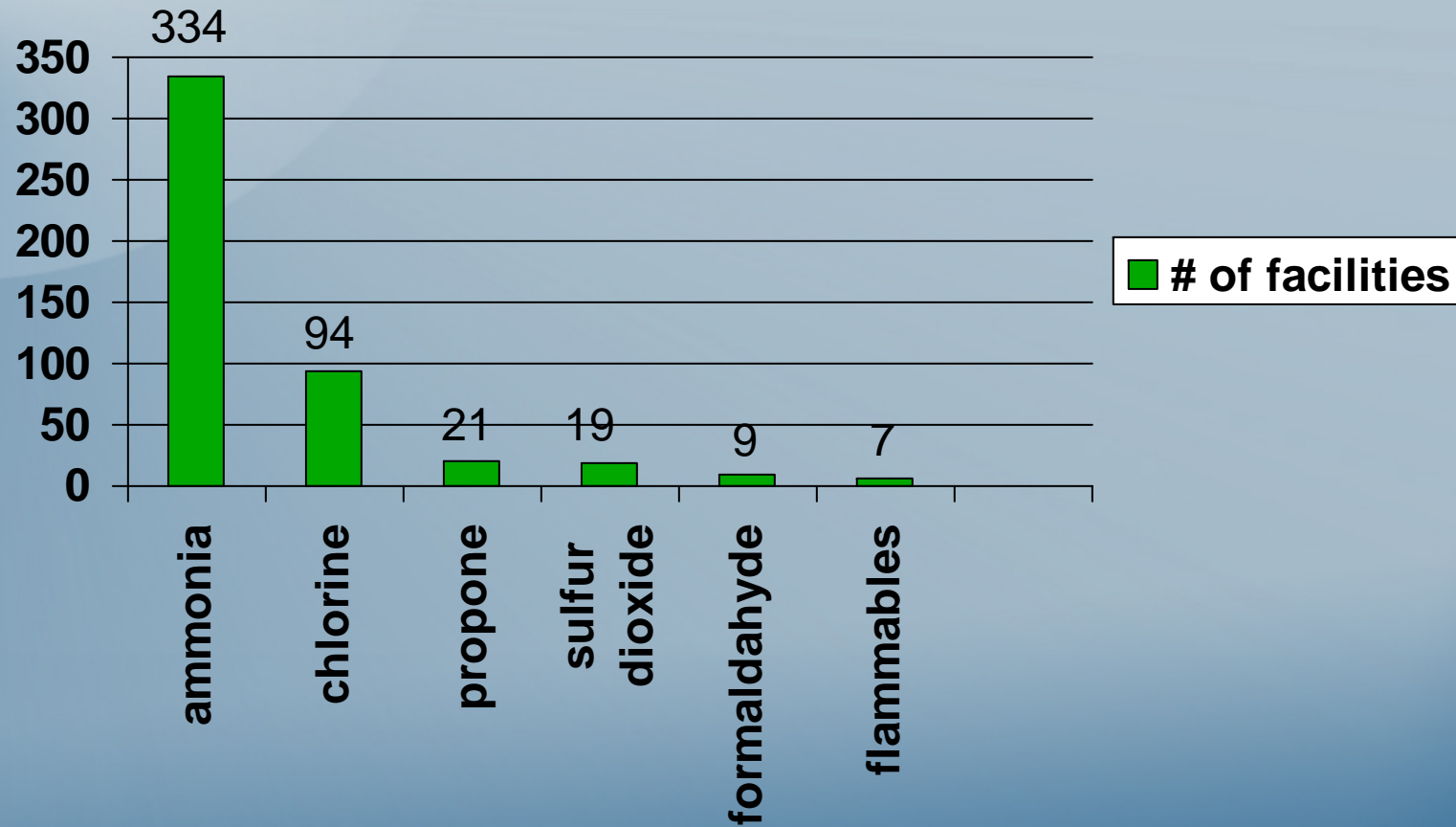
Applicability cont.

Region 10 universe = 488



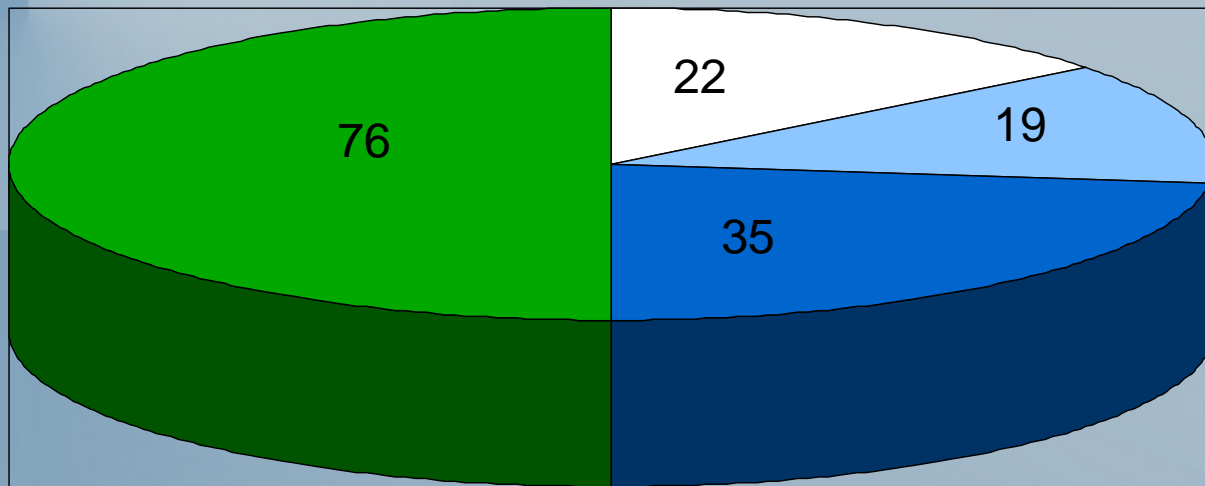
Applicability cont.

R-10 Hazardous Chemicals



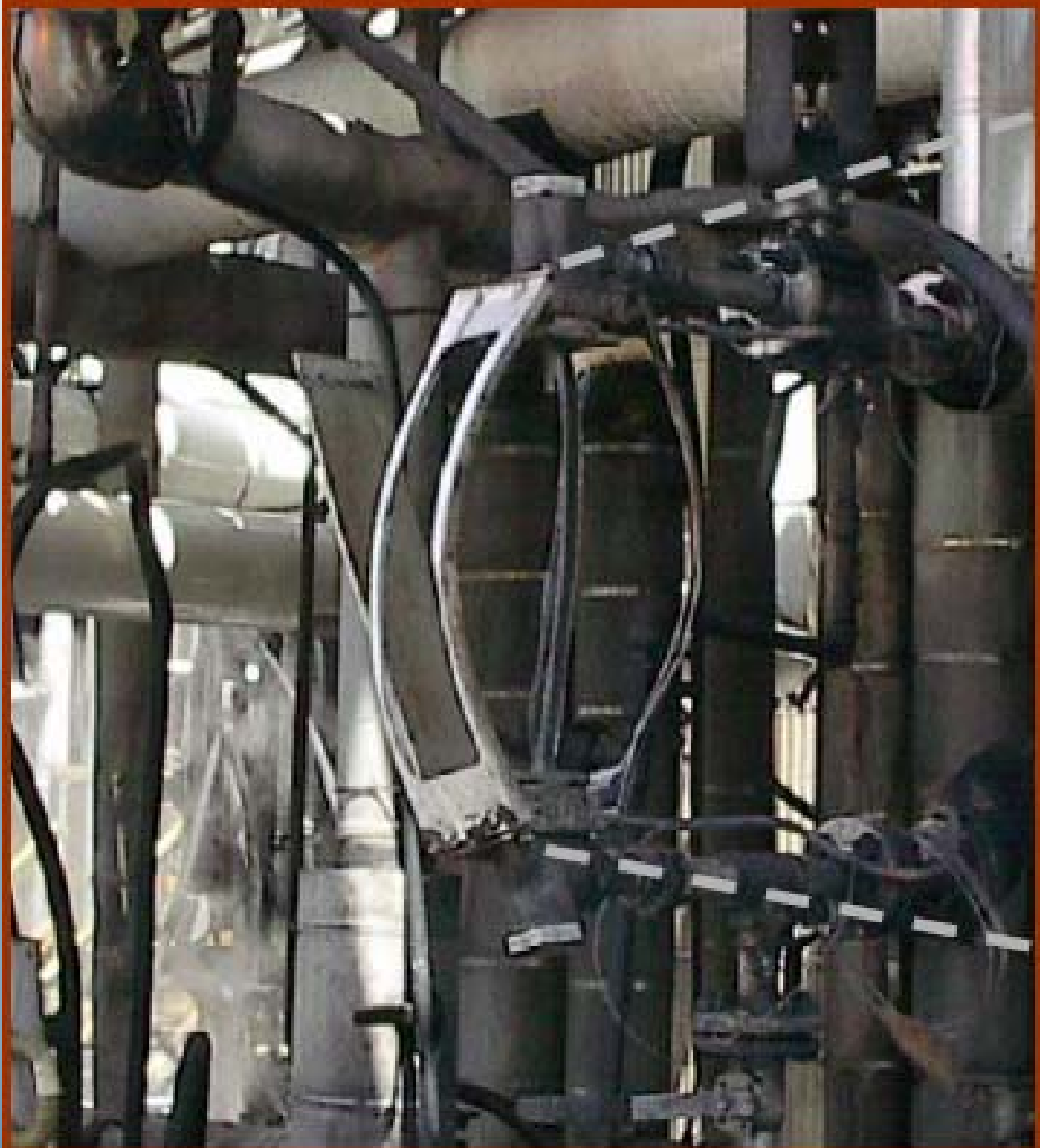
Applicability cont.

Refrigeration Facilities = 152



Risk Management Begins with You

- Process Safety Information
 - Information about the hazards of ammonia and about the refrigeration system
 - Maximum inventory
 - Ventilation, relief system design and safety systems
 - P&IDs and materials of construction
 - Safe upper/lower limits for pressure, flow, temperature & consequence of deviation



Risk Management Begins with You cont.

- Process Hazard Analysis
 - Identify hazards of NH₃ system
 - Identify engineering and administrative controls and consequences of failure
 - Document resolution of completed recommendations
 - Update every 5 yrs



Risk Management Begins with You

cont.

- Operating Procedures
 - Instructions for recharge, maintenance, change-out etc.
 - Procedures for start-up, normal operations, temp operations, emergency shutdown
 - Annual certification that the procedures are current and accurate



Risk Management Begins with You cont.

- Training
 - Initial operator training including safety and health hazards, emergency operations & safe work practices
 - Refresher training every 3 yrs
 - Documentation of training and comprehension

Risk Management Begins with You cont.

- Mechanical Integrity
 - Written procedures to maintain process
 - Training to maintain equipment integrity
 - Inspections and tests on equipment
 - Assured equipment is suitable for its use



Chlorine transfer hose
rupture in Festus, MO



Risk Management Begins with You cont.

- Management of Change
 - Written procedures to manage changes to covered process including
 - Basis for change
 - Impact on safety and health
 - Modifications to operating procedures
 - Notify and train operators prior to start-up
 - Update operating procedures and process safety info accordingly

Refinery fire in Anacortes, WA caused by a lack of MOC



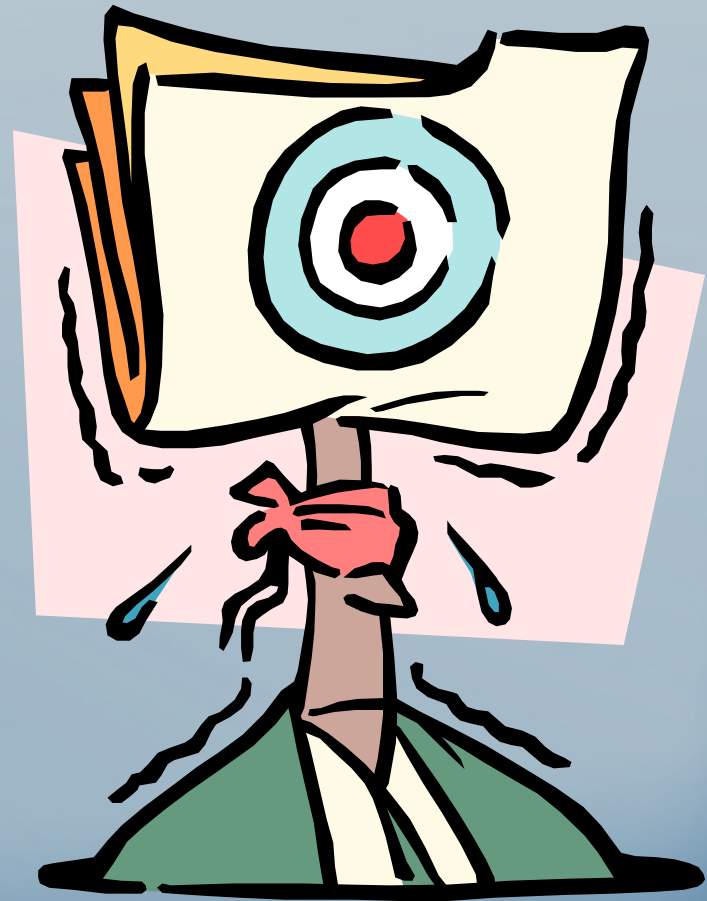
EPA Inspections

- Announced and unannounced
- Facilities with or without RMPs



EPA Inspections cont.

- Inspections conducted when:
 - Accidental releases have occurred;
 - OSHA PSM compliance deficiencies are reported;
 - Geographic population at risk;
 - Complaints received from the public
 - New facility or one that hasn't been inspected before



Additional RMP Info

**RMP Basics and Techniques, March 29-
April 1 Portland, OR**

National 112(r) website

www.epa.gov/ceppo

Regional 112(r) website

www.epa.gov/r10earth/112r.htm

When do I need to update my RMP?

- Complete Update
 - every 5 years. Most due June 21, 2004.
 - w/in 3 yrs of listing new EPA regulated substance
 - By date that new regulated substance is present above TQ.
 - w/in 6 months of a change that requires a revised PHA or hazard review (i.e., major process change), increase/decrease in OCA distance of 2 or more, or change in program level.

When do I need to update my RMP? cont.

- **Administrative Update:**

April 9, 2004 Revised RMP Rule required administrative changes by June 21, 2004.

- Update emergency contact w/in 1 month
- Update 5-yr accidents w/in 6 months
- Include emergency contact email, contractor use and include reason for RMP submission
- No OCA data needed in Executive Summary